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AUTHOR Pfaehler, Brenda
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ABSTRACT

This study describes the development of the Learning Center at the School of Business at the University of Wisconsin-Madison. The Center was established to provide support for minority students taking pre-business courses required for entrance to the School, such as accounting, economics, and business statistics; to demonstrate positive affective and cognitive outcomes; and to demonstrate increased minority retention and successful enrollment in the School of Business. The Center provided academic support in a small study group format and sought to develop students' metacognitive skills. The evaluation report found that the Center served 179 students during the first semester and 210 students the second semester. Of this total, 136 were minority students, indicating that the Center served nearly 80% of the targeted student population. Affective evaluations were overwhelmingly positive, with negative comments relating primarily to administrative needs. The relationship of student grades and amount of Center utilization indicated a positive correlation. The percentage of minority students admitted to the School of Business rose from 3.9% to 6.0%. Of the new enrollees, 76.4% had used the services of the Center. Survey instruments and individual comments from the survey are included in the appendices. Includes 29 references. (JDD)

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ENHANCING AFFECTIVE AND COGNITIVE OUTCOMES OF MINORITY PRE-BUSINESS STUDENTS: A PROGRAM EVALUATION

by

Brenda Pfaehler, Ph.D.*

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American Educational Research Association
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*Director, School of Business Learning Center
University of Wisconsin-Madison
(608) 262-1186

1155 Observatory Drive
Madison, Wisconsin 53706

HE 023 542

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ENHANCING AFFECTIVE AND COGNITIVE OUTCOMES OF MINORITY PRE-BUSINESS STUDENTS : A PROGRAM EVALUATION

Overview and Objectives

Introduction

The Madison Plan, a vision for progressive institutional and educational change fostering a non-discriminatory environment at the University of Wisconsin - Madison was established in 1988 by the new Chancellor. The plan provides a long range framework for institutional change.

Elements of this plan include increased student access through the development of financial aid programs for minority students as well as intensified recruitment programs for minority student, faculty, academic and classified staff. Five year goals are established for each area. The plan commits to the provision of an "excellent and diverse education" (Shalala, 1987) for minority students through curricular change; the development of retention programs; the establishment of a multicultural center; increased partnerships with local schools and host families; and the provision of a non-discriminatory environment focusing on student and employee conduct.

The School of Business and the Madison Plan

Undergraduates apply for admission to the School of Business following their sophomore year and/or after the completion of a series of prerequisite courses. To be admitted students must have maintained an overall grade point average (GPA) of at least 3.00 of a possible 4.00. Historically, all students who have been admitted to the school have

graduated. Minorities were less than 4 percent of the enrollment in the School of Business in the spring of 1987. That year overall minority enrollment in the UW-Madison was approximately 5 percent.) The School wanted to enroll a student that would be increasingly racially diverse and was ready to develop a program to foster change.

Student records introduced and interviews with student services staff revealed causes as well as support for solutions to the low minority matriculation in the school (Davis, 1987). This investigation showed that students' lack of success in a cluster of quantitative courses was a barrier to their admission. The courses were Accounting, Business Statistics, Macro-economics, Micro-economics, and Calculus--all required for entrance to the school. To remove this barrier in the fall of 1988, the School of Business established a Learning Center, funded in part by the Madison Plan.

The goals for the Center were: (1) to involve minority students taking Accounting, Economics and Business Statistics in the program; (2) to demonstrate positive affective and cognitive outcomes; and (3) to demonstrate, over time, increased minority retention and successful enrollment in the School of Business.

This study describes the program's development and to evaluates its degree of success in meeting programmatic objectives. A program delineation of its goals, resources, procedures and management will be detailed.

Perspectives and Theoretical Framework

Retention Studies

The theoretical framework for the organization of the Learning Center was based on the extensive work of Tinto (1987), Beale (1980), Pascarella (1983-1987), and Astin (1975) which detailed elements of successful retention programs and utilize the Tinto model. This model maintains that the two primary factors related to student withdrawal are the personal characteristics of the students and the nature of the student's interaction with the college.

Specifically, Tinto argues that learning centers must "become more fully integrated into the life of institutions if higher education is to more effectively meet the challenges of educating and retaining students in the future." The secret to successful retention, he states, lies in the very foundations of the higher education enterprise, namely that it is an enterprise committed to the education of "all, not just some, of its students". Tinto feels that the "success of affective retention lies in the development of effective educational communities which actively involve students in the learning process(1988, 1-3)."

Student involvement

In the final report of the Study Group on the Conditions of Excellence in American Education, sponsored by the National Institute of Education, "Involvement in Learning" (1984) adequate measures of educational excellence are couched in terms of student outcomes. These include such academic outcomes as knowledge, intellectual capacities, and skills. Affective outcomes such as self-confidence, persistence, leadership, empathy, social responsibility, and understanding of cultural and intellectual differences are also important. The authors

state that undergraduate education would be improved by applying existing knowledge about three critical conditions of excellence: (1) student involvement; (2) high expectations; and (3) assessment and feedback (p.16-17). Research evidence of retention studies, as well as teaching/learning styles, suggests that the more time and effort students invest in the learning process the greater will be their affective and cognitive outcomes. "Highly involved students demonstrate their commitment in a variety of ways: by devoting considerable energy to studying, by working at on-campus rather than off-campus jobs, by participating actively in student organizations, and by interacting frequently with faculty members and student peers (p.17).

The most important implications of this evidence are that :

1. "The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.
2. The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement in learning (p.19)".

In order to increase student involvement, it is suggested that colleges implement strategies called "front-loading" in which resources are reallocated to provide increased service to freshman and sophomore level students. Faculty should make greater use of active modes of teaching and require that students take greater responsibility for their learning (p.27). Learning strategies utilized should be designed to increase, not reduce, the amount of personal contact between students and faculty.

Astin states that the key to effective educational programs is quite simply that "students learn by becoming involved." (p. 133) His involvement theory comprises five basic postulates:

1. Involvement refers to the investment of physical and psychological energy in various "objects"...the student experience or highly specific activity such as the preparing for an examination.
2. Regardless of its object, involvement occurs along a continuum. Different students manifest different degrees of involvement in an object, and the same student manifest different degrees of involvement in different objects at different times.
3. Involvement has both quantitative and qualitative features. For example how long does the student study, and what does the student do during that time.
4. The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.
5. The effectiveness of any educational policy or practice is related to the capacity of that policy or practice to increase student involvement. (Astin, p. 135-6.)

Teaching and learning styles

Learning theory and the relationship of teaching-learning styles detailed in the work of Belenky (1986), Grasha (1984), Kolb ((1981), Lakoff (1980), and Perry (1970) provided a student center learning prospective. Each of these theorists suggest methods for increasing the involvement of students in the learning process, resulting in increased

affective and cognitive outcomes. "Getting students involved in the classroom is a complicated issue, It is important first to diagnose the reasons the level of participation is inadequate and then to design strategies to overcome them. Generally, a lack of involvement appears to be related to personal constraints that inhibit the acceptance and use of new ideas, problems in the communication climate of the classroom, and the reliance on group processes that fail to facilitate interaction among students and teachers (Grasha, p. 161)."

Program Evaluation

Evaluation methods and techniques

A comprehensive program evaluation should be concerned with both process and outcome. The first meaning of process is monitoring, describing the population, discovering the extent to which the treatment or program has been implemented and providing immediate feedback of the formative type. The second meaning of process is causal -- discovering or confirming the process by which the treatment had the effect it did. Thus measuring the effect of the program is the summative outcome or the impact assessment.

If evaluation is to provide a complete understanding of the program it must accomplish at least three tasks: monitoring, impact assessment and causal explanation. This requires the use of both quantitative and qualitative methods (Reichardt & Cook, p. 21).

A program evaluation model, CIPP (Stufflebeam 1971), was chosen because it allows the evaluation process to contribute to the decision-making process at each stage of program development while meeting criteria necessary for a comprehensive evaluation described by Reichardt & Cook. This model includes four types of evaluation; context

evaluation, the evaluation analysis of problems and needs in a specific educational setting; input evaluation concerns judgments about the resources and strategies needed to accomplish program goals and objectives; process evaluation, the collection of evaluative data once the program has been designed and put into operation; and finally, product evaluation, determining the extent to which the goals of the program have been achieved (Borg & Gall, 1983).

Context Evaluation

Context evaluation "involves analysis of problems and needs in a specific education setting. A need is defined as a discrepancy between an existing condition and a desired condition "(Borg & Gall, p. 748). The School of Business began its minority/disadvantaged recruitment and retention program in 1982. A program review revealed that the students entering the School were "better educated, informed and with higher grade point averages as a result of both increased student quality and intensive pre-business counseling efforts by the Student Services Advisor, faculty, and staff (Davis, p.1)."

Given these efforts, it was felt that far too many students were still stymied at the pre-business levels because of unacceptable progress in "key" pre-business courses. The potential pool of minority pre-business students had increased from 124 in 1982 to 185 in 1987. The percent of minority students within the school rose from 1.3 percent in 1982 to 3.5 percent in 1987.

Student interviews indicated that many minority/disadvantaged pre-business students approached courses required for admittance to the

school with a higher than normal degree of anxiety. This anxiety ultimately affected their performance (Davis, p.1)

Based on this documented need, the School of Business proposed to retain and expand its pool of minority applicants by providing what were then called "tutorial" services in courses which historically had barred full acceptance into the School of Business. The initial program goals were:

A. To increase the total number of minority/disadvantaged students admitted to the School. This would, in turn, lead to increased numbers of minority/disadvantaged graduating.

B. To assure sufficient numbers of minority/disadvantaged students within the School of Business to eliminate social isolation as a source of anxiety and career demotivation.

C. To raise minority/disadvantaged grade point averages early in their student careers so that these students could better compete with other graduates seeking employment after graduation without having unrealistic expectations placed upon them in their last two years. (Davis, p. 2)"

The historical record and the request to the Chancellor's office for support from the Madison Plan for a center clearly indicate that the School of Business believed there was a serious discrepancy between the existing level of participation of minority/disadvantaged students and the level desired.

Input Evaluation

This section of the program evaluation deals with the judgments made about the resources and strategies needed to accomplish the goals and objectives of the Learning Center. Whenever possible decisions were

based on theory, past practice and educational philosophy. Fiscal limitations were considered later.

During a three month period prior to the first semester of the Center's operation several major decisions were made concerning the formation of the new center.

1. The philosophical/theoretical approach was chosen based on the vast body of retention literature, teaching/ learning theory, extensive interviews with directors of similar programs both at the University of Wisconsin-Madison and others and the past academic experience of the program designer.
2. Potential levels of student need for academic support were determined based on prior student matriculation in barrier courses.
3. Support would be provided for all students taking these courses, but targeted students would be placed first.
4. Academic support would be provided for students in a small group format.
5. The Learning Center staff would be selected based on demonstrated expertise in their content area, prior teaching/tutoring experience and a desire to work with minority students; further, the staff of the center would be culturally diverse.
6. Center staff would function as group facilitators; sessions would be more like graduate study groups than typical undergraduate teaching session run by teaching assistants.
7. Academic support would develop the metacognitive skills of students by emphasizing process rather than "answers."

8. Center staff would participate in an on-going in service program to be included in weekly staff meetings of at least one hour.

The staff of the Learning Center assumes no student deficits. We assume that students who come to the center are willing to make a commitment to a level of excellence which they can achieve. Our job is to find a way to help students accomplish their goals. This perspective was influenced deeply by the work of Yuri Treisman at U-C Berkeley and by the words of Dr. Herman J. Blake.

Summary

The center provided small group support for students in Accounting, Economics and Business Statistics. (Similar support for calculus students is available in a tutorial center operated by the mathematics department.) The groups of no more than six to eight students, met twice weekly for sessions of at least 55 minutes. The center staff served as coaches/assistants with emphasis on student-directed learning. The goal was to develop independent learners. Students could also meet with staff on a one - to - one basis during scheduled office hours. Both small-group sessions and office hours were scheduled at times when students told us that they could and would attend. The center's approach was to provide a student-centered program.

Process Evaluation & Product Evaluation

Introduction

A multifaceted data collection system was designed to determine if the program was meeting its stated goals. Qualitative and quantitative data were collected. To accomplish the process evaluation: (1)

attendance records were kept throughout the first year of the program; (2) student evaluations were given three times each semester providing affective measures; and (3) student grades were evaluated providing a measure of cognitive outcomes. In a quasi-experimental model student gains were submitted to simple statistical analysis and were compared to two comparison groups of minority students. Comparison of group means and their relationship to time spent in center activity were tested for statistical significance. The Pearson correlation coefficient was determined to strengthen the discussion of the findings.

Data Sources

All students who used the center were asked to fill out a form detailing their prior experiences with similar courses, their goals or expectations in the courses for which they wanted academic assistance and their class schedule. During an interview study patterns and expectations of the center were discussed. Students were asked to make a commitment to the center agreeing to attend classes, read all text and attempt all homework before coming to the center sessions. They were also asked to call if they could not attend a session. In a sense they were asked to contract for excellence. The director kept records of information discussed during these interviews. A copy of the form used is in Appendix A.

Learning Center Enrollment Patterns

The Learning Center began serving students during the first week of classes of the each semester. In response to student demand for support in accounting courses, one additional staff person was hired at a small percent of time in the second semester. Many students who used the center during second semester had used the center in fall; others came

because of the recommendations of fellow students. The existence of the center was announced in center supported classes. Posters were displayed outside lecture halls and in lounge areas shown on Table 1. Students who enrolled for more than one course are represented by "student placements." These enrollment figures include graduate students.

Insert Table 1 about here

Center staff kept daily attendance records, providing a record of student involvement in the center. The center director called students who missed several sessions in a row or who had enrolled in the center and never attended sessions. Those who were "really behind" were encouraged to return to the center, perhaps for extra one-on-one office hours as well as their regular biweekly sessions. In some cases, the student services director for the School of Business also contacted the students. Her support of the program and acceptance by the targeted students was of great value to the program. In all cases, students were given positive support and encouraged to return.

Positive attendance management was often discussed at weekly staff meetings. It was noted that student attendance tended to be somewhat cyclical in nature; peaking just before an exam. Staff members were encouraged to make all contacts with students enrolled in the center positive and supportive rather than punitive in any way. Students were encouraged to maintain regular attendance rather than to "disappear" and "reappear" with exam timing. Once again, the emphasis was placed on the process of learning and student participation rather than "getting through" exam time. Students were encouraged to enjoy the learning process.

Table 1

Student Enrollment Fall and Spring Semester Summaries

	FALL 1988	SPRING 1989
Student Enrollment	179	210
Student Placements*	231	263

*Students who enrolled in more than one course supported by the Center.

Minority Student Involvement

The Center's major focus is to assist minority students as they prepare to enter the School of Business. Students were encouraged by their advisors to use the services of the Center. All students who had self-declared minority status and were enrolled in courses supported by the center received two personalized letters from the Director, inviting them to use the center. The Director spent a considerable amount of time networking with other University staff involved in support of minority students.

The success of these methods may be seen in Table 2 which shows minority enrollment during the second semester. The first figure shows the number of minority students. The second figure represents the percent of all students in the center who are minority. Graduate and undergraduate participation has been separated in the spring semesters when academic support was offered to graduate students on an experimental basis. During that semester, 41.9 percent of the undergraduates and 50 percent of the graduate students were members of the groups targeted for support.

Insert Table 2 about here

Minority student participation in the School of Business Learning Center has continued to increase as shown in Table 3.

Table 2

Minority Student Enrollment Summary - Fall and Spring Semester

	FALL Undergraduate (N= 179)		SPRING Graduate (N = 186)		(N= 24)	
	No.	%	No.	%	No.	%
Student Enrollment	58	32.4	78	41.9	12	50.0
Student Placements	80*	34.6**	100	38.02	19	70.37

* 31 students have enrolled in study groups for two academic areas and 3 students have enrolled in three study groups.

** These percentages are based on the number of minority students who participated in two or more study groups.

Table 3

Minority Student Enrollment Patterns

Semester	Total Student Placements Undergraduate	Graduate	Minority Students & % of Total Undergraduate	Graduate
Fall 1988	179	-	80 (34.6%)	
Spring 1989	186	27	100 (38%)	19 (70.4%)
Summer 1989	65	-	35 (53.8%)	-
Fall 1989	169	64	86 (51.0%)	36 (56.2%)
Spring 1990*	177	107	50 (46.7%)	70 (44.3%)

*Enrollment after first week and one-half of semester

conditions and suggested changing locations. They found it difficult to concentrate on the single group session conducted in the center of the room while office hours occurred simultaneously. So did the staff.

A sample of student response to evaluation follows; a complete collection may be found in Appendix C. Students told us:

- "...is a very kind, considerate teacher. Very pleasant and relays info well. Should be given a promotion.
- "Such a program is certainly helpful to a student like me who face difficulty in coping with a course that I'm especially weak in. I find that my group leader is very gifted in the aspect of teaching. I'm able to understand quite a few important concepts through...which I didn't during class...knows what is giving us problems. I've recommended...study group to all my friends who plan to take the course."
- "I found the tutorial very helpful in giving me practice problems that you could ask for help when you did not understand."
- "This study group was easily a gift from God as without it I would be totally lost in lecture (and the text). ...has done an excellent job. Always well prepared and ready to answer our questions. (No question too dumb.) I give...an excellent evaluation and believe...should be an excellent professor."
- "This is my second semester of using the Learning Center and it has helped me out tremendously. My grades have really shown improvement because of the extra time spent in the groups reviewing the material."
- "...has been a lifesaver. Some of my prays have been answered."

-"This program has been very helpful due to the leader. ...has been thorough and willing to help out and explain everything. I'm glad I attended. It's nice to be able to ask questions and work in a small group. It's easy to feel lost among 50,000 students."

-"My only comment is "thank you" to all the people who make this program work because it really does make a difference."

-"Advertise the program more."

-"The study really helped me a lot because I improved my grade by one letter grade and most important, I understand the problems better."

-"The Learning Center should have a better and larger meeting place."

-"The tutorial study group meetings should be held more than two times a week. There should be more student participation and discussion. Leaders should emphasize working of previous exams and help to thoroughly prepare students for the two-hour exams."

The Study Group Organization & Evaluation Observations

The Learning Center held 50 sessions weekly, each lasted approximately 50-55 minutes. The maximum number of students per session was held to eight in response to student and staff evaluations during the first semester. Both felt that when the groups became any larger student questions could not be answered completely nor could student participation be encouraged. Students also had the opportunity to meet with staff on a one-to-one basis during office hours. Each week office hours were available for students as follows: nine for accounting, four for business statistics and six for economics.

Both small group sessions and office hours were determined by student availability and convenience. Students were requested to let us know if they would be unable to attend a scheduled session and attendance records were kept. Students who showed a pattern of poor attendance were contacted, whenever possible, by the Director.

Student needs received the highest priority during the sessions, the staff encouraged student participation; their questions often provided the direction for the session. Assessments of student difficulty during the first semester led to emphasis on helping students understand the process of the problem solving rather than on getting the answer. The students major difficulty arose from the fact that they were simply doing a problem or reading a chapter to get an answer. Often they had no understanding of why they did things. They were not able to tell us why they decided to solve a problem the way they did, nor what they knew. Often they would say, "I just did it" or "because it was like the sample in the book" or because that " is how the professor or TA did it."

Students who relied on previously successful techniques, such as memorization or rote response, were having trouble at the college level. These techniques no longer served them; the scope of knowledge was too great.

To increase attention on student metacognitive skills the staff was trained in small group technique as well as teaching and learning styles. And the staff was encouraged to develop techniques that would help students understand the process underlying successful problem solving. The concept or process behind the solution was highlighted.

Students were not always comfortable with this type of instruction. Many asked for "the answers" or a solution manual. Their comfort appeared to grow throughout the semester. At the end of the semester one student told us that in the beginning she was really frustrated with the staff member who had been helping her. She was mad at him because he would not simply tell her the answer to the problem she was working on. Instead he guided her toward understanding of the process involved. By the end of the semester she realized that if he had given her the answer to the first problem, that would be all she had -- an answer to problem one. She went on to say that as a result of his persistence she now had the ability to think about all the problems.

A second pattern of student difficulty centered around a shaky understanding of mathematical principles. Some of the students enrolled in the center had not used their math in a pragmatic manner for many years. Others simply had weak skills or lacked an understanding of applied mathematics. To help students overcome these difficulties, a review of relevant mathematical principles was provided, regardless of content area, during the first weeks of the Spring semester.

Additional student support was provided in note-taking and test-taking strategies.

Minority Student Cognitive Gains

An important program goal of the Learning Center was to increase minority student learning outcomes in courses which had been barriers to student success. Student grades were provided by the Dean's Office and minority status by the Office of Affirmative Action. All data was maintained with the strictest degree of confidentiality. The Center Director kept records of spontaneous student comments and/or concerns.

Center staff provided evaluative input on a regular basis during weekly staff meetings.

In order to report cognitive outcomes, student grades were compared with those a Comparison Group (COMP GRP). Members of this group were self-declared minority students the year preceding the center's existence and were enrolled in courses supported by the Center. We assumed that three students would be similar to students who had enrolled during Spring 1989 and that the course content would be close, if not the same, to that of Spring 1989.

Student participation was divided into three usage patterns: those who came 1-40 percent of the time, those who came 41-79 percent of the time and those who came 80 percent of the time or more.

The relationship of students grades and the amount of Center utilization by course is shown on Table 4 for both Fall and Spring semesters. Students who used the Center 1-40 percent of the time had a mean score of 1.7 or slightly less than a C. Those using the Center 41-79 percent of the time had a mean score of 2.5 or equal to a B/C. Those who used the Center 80 percent of the time or more, had a mean score of 2.8 or just under a B. This unadjusted mean reflects a range of scores of 2.000 to 4.000 with a median of 3.00 equal to a B.

Insert Table 4 about here

The median score of those students who used the center at a maximum level is one full grade above those in the COMP GRP or other Center participants. Those in Group 2 now have a mean score above that of the comparison group.

Table 4

Student Grade and Center Utilization Summary

	N		MEAN		MEDIAN		SD	
	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
COMP GRP	80	80	2.350	2.350	2.000	2.000	1.101	1.101
GRP 1 (1-40%)	24	14	1.875	1.750	2.000	2.000	0.797	1.088
GRP 2 (41-79%)	15	44	2.000	2.511	2.000	2.500	1.210	0.892
GRP 3 (80% or +)	20	20	3.000	2.850*	3.000	3.000	0.649	0.813

* The range of scores for the Spring Grp 3 was from 2.000 to 4.000.

The comparison of the group means and Learning Center users is shown in Table 5. It was assumed that participation in the Center would have a positive effect on cognitive outcomes. When this hypothesis was tested, the relationship of cognitive outcome and maximum attendance was highly significant (P=.014). The relationship is also significant (P=.037) for those who used the center from 1-49 percent of the time. While the mean scores of those in Group 2 are now above those in the COMP GRP, the relationship is not yet at a level of statistical significance.

Insert Table 5 about here

Due to the limitations of quasi-experimental research such as this, it is difficult to describe the characteristics of the members of each of these groups. For instance, it may be that students who select to use the Center only a small amount of time know when they need help or that they simply spend less time on their courses. It is also true that those who are heavy users of the Center may be compulsive students who would study a great deal anyway; or they may be students for whom extending time on task is necessary for maximum success. It does appear, however, that there is a positive relationship between time spent in the center and cognitive outcomes.

In order to further test this apparent relationship, the correlation coefficient between degree of attendance and score was calculated. The Pearson coefficient (R = .489) indicates a strong relationship between time and scores. Because of the sampling technique

Table 5

Comparison of Groups Means (Comp GRP 1 and Learning Center Users)

GROUP	N			MEAN		SD		P	
	FALL	SPRING	F	ALL	SPRING	FALL	SPRING	FALL	SPRING
COMP GRP 1	80	80		2.35	2.35	1.10	1.10	---	---
GRP 1 (1-40%)	24	14		1.88	1.75	0.797	1.09	.012	.037
GRP 2 (41-79%)	15	44		2.00	2.511	1.21	0.892	NS	NS*
GRP 3(80% or +)	20	20		3.00	2.850	0.649	0.813	.001	.014

*The correlation remains in the non-significant range, it is interesting to note that the mean score of GRP 2 are now greater than those of the COMP GRP.

limitations, it is not possible to assume causation, but it does appear that within this sample for this semester there is a positive relationship between maximum Center usage and cognitive outcomes.

The outcomes for students who used the Center were compared with attendance patterns by specific content area. The results of the analysis are shown on Tables D(1-6) and may be found in Appendix D. The relationship between positive cognitive outcomes and maximum attendance holds for each course which the Center supported.

Limitations of process evaluation techniques

During the first year of data collection, student participation in the learning center was divided into three usage patterns: those who came 1-40 percent of the time, those who came 41-79 percent of the time and those who came 80 percent of the time or more. This system was refined during the second year of operation. The actual number of minutes students utilized the center was recorded by staff members. These records included attendance in the small groups, office hours, and other formal meetings such as pre-exam workshops. This allowed the use of simple regression analysis.

To further establish the effectiveness of the Center during the second year, a comparison of targeted student outcomes with non-minority students was undertaken. Table 6 summarizes the correlations between student grades and attendance hours and the results of the regression analysis. Correlations between the two variables which were not significant are included as well, because in all cases the regression equation was found to be positive. The last five columns present the $Beta_0$, $Beta_1$, F, its level of significance, and the R^2, or proportion of variance by the variance.

Insert Table 6 about here

The F-Test statistic from the analysis of variance yields a precise measure of the magnitude of a relationship, namely the percentage of variance in the dependent variable accounted for in the independent variable. This information does not address the larger question of the practical significance of a finding, the purpose of the effect size estimates (Rubin & Conway, 1985). The experimental effect can be estimated by changes in the proportion (percent) of variance explained in the dependent measures. In general, the greater the effect size, the greater the policy implications.

The estimate of the magnitude of relationships follows the guidelines initially put forth by Cohn (1977), and supported by others subsequently (Sechrest & Yeaton, 1982; Rubin & Conway, 1985). Cohen defined small effect sizes as those in which about 1 percent of the variance in the dependent variable was explained by the independent variable or a correlation about .10. While calling the effect small, he pointed out it could applied practically, for example, to the difference in the height of 15- and 16- year old girls.

He defined medium effect sizes as those in which about 6 percent of the variance in the dependent variable was explained, the difference in mean IQ between clerical and semi-skilled workers. This translates into a correlation of about .20. Cohen defined large effect sizes as those in which 14 percent of the variance is explained, or the difference in the mean IQ holders of Ph.D. degrees and of typical college freshman, or of the height difference between 13- and 16-year old girls. This translates practically into a correlation of about .37.

Table 6

Correlations between Student Grades and Attendance and Regression Summary

	Correlation	Regression Summary B_0	B_1	F	Sig.	R^2
All Undergraduates	.210	2.05	.02	6.11	.015	4.4%
All Minority Undergrad	.361	1.54	.04	10.06	.002	13.1%
All Majority Undergrad	.097	2.46	.01	.59	NS	.9%

The change in data collection and analysis strengthens the assumptions regarding the relationship between student cognitive outcomes and persistent center participation. The results of the regression analysis indicate that there is a significant relationship between cognitive outcome and hours of center attendance. First, 13.1 percent of the variance is explained in the dependent variable for all minority students utilizing the center; a large effect. This is an important finding as the larger the effect of the relationship the greater the policy implication.

Second, the regression equation intercept points ($Beta_0$) for all minority students utilizing the center were 1.54 or about the equivalent of D plus while the intercept point for all majority students was equal to a B/C. However, for every ten hours of center participation, minority students increased their grades by .4 ($Beta_1$) while the increase for majority students was only .1. Students who maximized their center utilization, i.e. 20 hours or more per semester, were able to increase their grades by at least one-half grade point and in many cases a full grade point above the intercept measure of the regression equation.

While minority students within this population started at a point which was lower than majority students, their cognitive outcomes ($Beta_1$) at the end of the semester were equal to or greater than those of the majority students.

Table E summarizes the correlations between student grades by specific course and attendance hours as well as the results of the regression analysis and can be found in Appendix E. The positive relationship between hours of center attendance and cognitive outcomes described in the previous table remain true.

School of Business - Undergraduate Minority Student Enrollment

Students are admitted to the School of Business after taking a series of course required for entrance. For most students completion of these requirements occurs following their sophomore year. During informal interviews with the Director, students have indicated that the "Learning Center really had made a difference" and that they felt they might not have been accepted in the School of Business program if "they had not used the center for support."

Table 7 summarizes the enrollment patterns of minority undergraduate students in the School of Business from Fall 1986 to Spring 1990. In the Spring semester prior to the intervention of the Learning Center, there were 39 minority students enrolled within the school (3.5 percent). After less than two years of operation, 68 minority students were enrolled in the school or 6.0 percent of the student body. The number of minority students nearly doubled in two years.

Learning center records indicated that of the 68 minority undergraduate students formally accepted in the School of Business, 76.4 percent of those students had used the services of the Learning Center prior to admission.

Insert Table 7 about here

Results or Conclusions

The goals for the Center were: (1) to involve minority students taking Accounting, Economics and Business Statistics in the program; (2) to demonstrate positive affective and cognitive outcomes; and (3) to

Table 7

Summary of Minority Enrollment in the School of Business 1986-1990

Time Periods	Minority Prebusiness Pool	Minority Students Admitted	% Admitted	% Minorities within School
Fall '86	182	11	5.9	2.7
Spring '87	185	11	6.4	3.5
Fall '87	-	-	-	-
Spring '88	-	-	-	-
Fall '88	52	13	8.6	4.5
Spring '89	122	8	6.6	5.1
Fall '89	137	20	14.5	6.0
Spring'90	140	12	8.6	6.0

* The School of Business Learning Center began serving students.

** Of the 68 minority students who were admitted into the School of Business 76.4% have utilized the services of the Learning Center prior to admittance.

Note: The total enrollment of the School of Business has remained nearly constant.

demonstrate, over time, increased minority retention and successful enrollment in the School of Business.

During the first year of operation, it appears that the Center met its program goals. First, the center served 179 students during the first semester; 34.7 percent of those students were minorities. This represented nearly 80 percent of the potential pool of students who were taking courses which the center supported and who had declared minority status. During the second semester, the center served 210 students, 78 of whom were minorities. The potential pool of students had not increased during the two semesters. The center was involving the targeted population.

Affective evaluations were overwhelmingly positive during both semesters. Students told us that the center had changed their lives, had been a "gift from God", showed them that they could ask questions and that they could succeed. Their negative comments related in almost all cases to administrative needs: smaller sessions, more office hours, or bigger rooms.

Student use patterns were divided into three use patterns : those who came 1-40 percent of the time they could; 41 - 79 percent; and 80 percent or more. The relationship of student grades and amount of center utilization during both semesters indicates a statistically positive correlation between grade and time. Students who used the center 80 percent of the time or more received at least one-half a grade higher than either students using the center a little or those in the comparison groups. Refinements in the evaluation procedure indicate the strength of this interaction. For every ten hours of center

participation on the part of targeted students, grades are increased in a range of .3 to .7.

This data indicates that the Center has begun to influence the cognitive outcomes of the minority students taking courses which previously had become barriers to acceptance in the School of Business programs. According to Tinto (1988) the real goal of all retention programs is education.

The outstanding statistic which supports this outcome is the increase in the acceptance rate of minority students into the School of Business. The percentage of minority students rose from 3.9 percent to 6.0 percent while the total enrollment levels of the School remaining nearly constant during the same time frame. Further the influence of involvement by minority students in the Learning Center may be assumed when the fact that 76.4 percent of the new enrollees had used the services of the center prior to acceptance into the school.

Educational Importance

In the summary of a study, "The Harvard Assessment Seminars: Explorations with Students and Faculty about Teaching Learning and Student Life," researchers reported that students thrive when they do at least some of their studying in small groups. "The overall finding, Mr. Light said, was that, 'small changes in teaching format can lead to significant gains for students'"(New York Times, 1990). The program evaluation of the School of Business Learning Center confirms those findings.

The program evaluation of the School of Business Learning Center indicates that institutional intervention can enhance both affective and cognitive learning outcomes. It has been shown that change will occur

if students are involved in study groups which encourage interaction and emphasize the process of learning enhancing metacognition early in the semester.

The University of Wisconsin-Madison, mindful of its foundation in free inquiry and expression, education of a diverse and changing student body, and service to the public, has affirmed its commitment to a community in which all students, staff and faculty take joy in the diversity of society and in working to understand and eliminate barriers to full participation in society of by every person. The university provides the leadership. The Learning Center provides one step toward that end.

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APPENDIX A

LEARNING CENTER
STUDENT PROFILE
(To be completed by the student.)

1. Name: _____

2. Date: _____

3. Madison Address: _____

4. Madison Phone Number: _____

5. Student ID Number: _____

6. Classification: _____

7. Courses for which you want support: (circle choices)

   Business 200 Business 201 Business 570 Economics 103 Economics 104
   Other:

8. Lecture Numbers/Section Numbers _____ (Give Dept.)
   _____ (Give Dept.)

9 How many credits are you registered for this semester? _____

10. What grade do you expect to achieve in theses courses for this semester?

Specify the semester/year and grade you received for any of the college course areas listed below. Indicate whether these courses were at the UW-Madison.

11. Math	Course No.	Grade	Semester/Year	UW-Madison?
12. Business	Course No.	Grade	Semester/Year	UW-Madison?
13. Economics	Course No.	Grade	Semester/Year	UW-Madison?

14. How many hours per week per course do you intend to study for this course outside of class? _____

15. In terms of your past experience, what is your evaluation of your ability in accounting, economics, statistics? (Circle appropriate response.)

Accounting	Above Average	Average	Below Average
Economics	Above Average	Average	Below Average
Statistics	Above Average	Average	Below Average

16. How did you learn about the Learning Center?

ACTION AFTER INTERVIEW

Date: _____

____ assigned

____ waiting list--assigned

____ referred to Guts/Hash - study groups

____ referred to Guts/Hash - study lounge

____ TA office hours

____ not accepted

- _____ F in prerequisite course
- _____ schedule conflicts
- _____ not interested in time commitment
- _____ wrong course
- _____ other

(To be completed by student.)

Fill in the schedule form, including your name, course numbers, phone and address. Indicate courses by department--don't just "X" in time.

If you work or have other regularly scheduled activities which would keep you from attending Learning Center sessions, your schedule should reflect this.

Leave as much flexibility as you can to be assigned to Learning Center sessions.

Assignments will be posted outside of Room 75, Bascom Hall (Phone: 262-1186). You should check for your assignment every few days.

NAME _____ PHONE _____

COURSE(S) FOR SESSIONS _____

ADDRESS _____

SESSION ASSIGNED _____

	M	T	W	R	F
7:45					
8:50					
9:55					
11:00					
12:05					
1:20					
2:25					
3:30					
4:35					
5:30					
6:30					
7:30					
8:30					

Date: _____ Instructor: _____

Year: _____ No. of credits: _____ Job: _____ Study Time: _____

Extra Help: _____

Background:

High School: _____

College: _____

Why Learning Center?

Comments:

APPENDIX B

Course: _____ Study Group Time: _____ Date: _____

LEARNING CENTER EVALUATION

We need your help. This evaluation will provide valuable information for the Learning Center program, the staff and you. The leader of your study group will not see this form until the end of the semester. However, the information gathered from all of the evaluations will be presented to the staff so that we can do the very best job for you. Please comment freely and conscientiously. Your opinion and concerns are important.

PART I

Please answer the following questions using short answers.

1. How did you find out about the Learning Center?

2. How many sessions have you attended? Office hours?

3. Are the study groups: (BE SURE TO EXPLAIN YOUR ANSWERS)

   a. Providing what you need?

   b. Keeping pace with your class/lecture?

   c. Providing enough chance to discuss theory?

   d. Providing enough help in problem solving?

   e. Providing enough individual help with homework?

4. Is your study group leader: (BE SURE TO EXPLAIN YOUR ANSWERS)

   a. Asking for your input in the discussions?

   b. Helping you to feel comfortable about participating?

   c. Making sure each concept is fully understood before moving to another?

   d. Letting you know that you can ask for more information?

PART II

Please answer each question with a "yes" or "no." More detailed comments may be given in Part IV.

1. Does the study group leader explain material well?

2. Do you feel free to ask questions? Are the answers helpful?

3. Does the leader treat students with respect?

Part II (cont.) (Remember, answer "yes" or "no.")

4. Does the leader speak and write clearly?

5. Does the leader work enough examples during each session?

6. Does the leader encourage you to think for yourself?

7. Does the leader mind being corrected when he/she makes a mistake?

8. Does the leader realize when you do not understand?

9. Does the leader arrive on time?

Part III

Circle the appropriate answer.

1. The leader is prepared and able to answer the questions and work problems and homework of the time.

   all most some little none

2. The leader organizes the session well of the time.

   all most some little none

3. The leader makes an effort to do a good job of leading the group of the time.

   all most some little none

4. The overall quality of the study group is:

   very good good fair poor very bad

PART IV

Allotment of time (Check the appropriate column).

	Not Enough Time	About Right time	Too Much Time
1. Leader working problems or homework.			
2. Leader talking.			
3. Students asking questions.			
4. Leader explaining concepts.			

PART IV (cont.)

	Not Enough Time	About Right Time	Too Much Time
5. Students working problems or homework.			
6. Leader answering questions.			

PART V

Please give any additional comments that you might have about your study group leader or the program in general.

PART VI

Please comment on the leader's office hours.

PART VII

Please indicate whether you find the overall quality of the study groups:
PLEASE BE SPECIFIC AND CIRCLE THE APPROPRIATE LETTER.

A. Very good. B. Good C. Fair D. Poor E. Very Bad

APPENDIX C

PART V

Please give any additional comments that you might have about your study group leader or the program in general.

" " is a good teacher. I got an A/B on my 2nd exam; if it wasn't for his help, I probably would have gotten an F, D or C.

It has been very helpful to me because: (1) before joining the group I did not interact with anyone in lecture, now I am able to do so; (2) by participating in the group I am encouraged to keep up with readings and assignments; and (3) by knowing that I will have feedback on questions, I am more apt to keep an interest in the course.

When students come to class with no specific questions, would like session to be more structured with leader reviewing important points and asking group questions to check our understanding similar to the kinds of questions we could find on an exam.

" " does a fantastic job explaining and encouraging us to ask questions. I have always been "gun shy" of asking things, but the class is small enough and personal enough for all to ask or comment.

I would like to see " " cover more material pertinent to the "core" of the course in the time that is allotted and to organize the time in such a way as to cover the most material possible in our time together. " " is enthused about the topic and I have enjoyed and have found helpful his study group. I would and will, if " " is available, recommend " " to future 104 students. If there was a shortcoming to our study group, in my eyes, it was that there was a certain amount of organization lacking.

" " does a good job of helping and encourages us to go to office hours to ask for help whenever we need it. " " takes a sincere interest in how we do in this class by encouraging us to keep up with the readings, study the material and go to lecture. Whenever I have a question, " " is always very helpful and never intimidating or condescending.

" " was great! Without his teaching I would not have grasped many of the concepts/process procedures/formulas needed to work the problems. Even though we got off to a "rocky" start, I would not hesitate to attend another section taught by " " and I would highly recommend other students to attend his section. I only with the regular TA's were as efficient as " ".

Very concerned about students. Nice to know that someone cares how you are doing. Good idea. Would encourage further use of study groups.

So far, I found this program has been very helpful and especially the TA.

I am really grateful to have the extra help like I did this last semester with Business 570.

I came late so I couldn't get all I would have liked to out of the program. " " was excellent!! Extremely patient and kind! Knew the material very good!

Many times we have run out of time in the section. Program has helped a lot and clears up confusion concerning the material.

Very useful. Leader knowledgeable, explained well, accessible, cared about doing a good job. Best in showing connections.

The program and leader are both excellent. My learning and interest in the course were both greatly increased.

I felt this study group went very well. We went over the important points in lecture, worked on the homework and also did additional problems to help explain the lectures.

" " is quite good. " " is very knowledgeable on the subject. Sometimes " " runs over class time a little too much, but on the whole " " is very good and has helped me quite a bit.

I'm very glad that I signed up for this right in the beginning. It's helped me keep up with all my questions and problems throughout the whole course. I don't have to cram for my exams.

The program in general is very useful. It is nice to get a little more attention than in our discussion groups. Here we feel free to ask any questions. I think that " " is an excellent leader and I know that I've learned a lot from her.

" " was very nice and very intelligent. I enjoyed the group and it helped me a lot.

I feel " " is a very good group leader. " " encourages us to think for ourselves and helps us when we need it. Also, " " is always willing to help and explain things until you understand.

I gained more from this tutorial than I did from the prof in lecture. Information is explicitly explained in great detail and very helpful. *Only if the exams covered better the material we're supposed to understand.

" " was very helpful in explaining the concepts which were unclear to me.

My group leaders should have given lectures. " " was much better than " " (professor).

" " is very good on a one-to-one basis. " " explains concepts well and knows when a student doesn't fully understand.

" " is helpful because " " reinforces the lectures using concepts from the book and professor.

It helped me a great deal. I'm really glad that I decided to join right from the beginning.

None.

I like the study group a lot. My leader is helpful and knowledgeable.

Very good. It helped me a lot if I had questions. " " would answer them. Very productive and " " always knew what was going on and " " always made sure that the class knew what was going on. Very helpful.

The leaders knows the material well, and the sections are a good help to reinforce the lecture.

I found the program and staff (TA's) are very helpful.

It is necessary for student participation and " " allows for plenty of participation. Could be quicker on changing subject. " " makes the best of material.

I feel " " is a very good study group leaders. " " is always willing to help and explains the concepts in an easy to understand manner. Also, I found " " to be very helpful when I just stop in. " " takes the time to make sure you understand the concept presented and if you don't, " " goes over them in many different ways until you do.

I felt this study group went very well. This group seemed to have the same problems and we functioned well together. " " explained the concepts very well and was very helpful.

It's great. The amount of help the program gives is amazing. All the people who work in this program should really feel proud and good of what they have done.

Became too large.

" " is fantastic, understanding and willing to help us any time. " " even has night office hours for us.

Very helpful. " " is excellent.

These study groups really helped me learn the material. They gave me extra opportunity to work out problems when I may not have spent as much time on them. I understand what I am doing when in study group.

The study group made accounting actually a little more fun because I began to realize I could understand and comprehend the material which gave me a little more incentive to prepare better for the class.

" " did an excellent job. " " was 100 times better than my TA. " " helps you to understand the concepts in a simple way. " " explanations are clear and concise.

I find these groups to be very helpful and hopefully will be able to get in next semester. It does supplement the course very well.

The only way to improve would be even more personal attention. I think this program is great and I know I would not be getting near this grade.

Group is very helpful. The leaders do an excellent job explaining and teaching. They should teach the course rather than the so-called TA's. " " makes you feel very comfortable about asking questions and explained things very well.

" " is great!

Wish I had " " for all my classes. " " makes it seem easy! Very enjoyable class.

Excellent program and " " really knows his stuff!

I really think it helps just to have one more person explain it all one more time. " " does a pretty good job. A little shaky on explaining some things.

" " was excellent. Without " " I would have been lost. " " made sure we understood everything before moving on and explained things very clearly.

Since I joined it, I have understood the concepts of accounting much better. " " is an excellent teacher. I had only wished that I had joined in the beginning of the semester.

" " is okay.

Without this discussion group, I would have been lost. Lectures move much too fast for anyone to follow. Thus these groups are very helpful. Thanks!

I think sometimes too much information is covered and it is not necessary. More time should be spent on topics that will be asked in essay questions on exams. The topics are fairly straightforward, but the applications are difficult.

I'm glad someone came up with the idea of a study group and really have no complaints.

I think that the group has been very helpful and useful.

I'm very pleased with the group. I feel it has really helped me.

Very willing to help, even outside of class.

" " understands the material very well and explains it well also. " " makes the sessions educational and fun!

A larger room with bigger table would be nice. Other than that, no complaints.

I feel " " did a great job in instructing and organizing the study groups. " " really knew what " " was doing and was very helpful. I wish I could have " " again as my tutor in Accounting 201.

The program has helped tremendously. It's given me the confidence I needed after a bad start. Our leader is excellent, genuinely concerned about our learning this and makes every effort to find ways for each individual to get what they need. Even seeks out people who don't ask for help.

The study group program is very helpful to improve my grade and the knowledge of materials clearly. The study group leader is knowledgeable about the subject. " " is very friendly and treated me with respect. I hope this program will expand more for further help of students.

I think it was very helpful. " " helped us understand the points that were important to the class.

I really am glad I enrolled in this tutorial program. Some of the problems would be impossible without the help of someone setting them up with you. Also, nice to review problems to see if you did them correctly.

Please comment on the leader's office hours.

" " is in " " office more than is scheduled!

Any time I went to the office for help, someone was there to assist.

I've never had to attend any.

They didn't work well into my schedule as posted, but " " was always willing and flexible enough to accommodate.

Always been available to help. " " even goes out of his way to make " " available.

" " is willing to get appointing if have conflict with office hours.

Always willing to help.

Only attended once.

Never went to see during hours.

Have only used once. O.K.

Leader was always available in office hours and stayed after class if necessary.

Our leader's office hours were at good times and " " he made " " available at other times. Especially good was having all the study groups meet to go over the exams prepared for us.

I normally don't attend them.

I've never attended " " office hours, but if I ever need any help, " " does " " best to accommodate me.

" " has extra office hours the day of exams.

Good. Found available use from them.

Don't apply.

Office hours were convenient as possible with my schedule.

Good. " " tries to be available whenever we need " ".

Always available if needed or " " would advise you of whom you should see.

I haven't used them, but if I need help " " is always available for me at some time.

" " made " " very available. " " was very willing to help.

None.

It works fine for me. I can make more than half of " " office hours. And " " is really helpful. " " even makes special arrangements for those who cannot make " " regular office hours.

Never went to any hours.

Seldom use because schedule conflict, but always willing to make appointment if needed.

Was here when I came in.

Good! Always made use of them.

" " office hours were very good, but I rarely used them.

I use those hours a lot. I'm surprised they are not tired of seeing me there. Well, maybe they are, but they always still help me out.

Too small of a room.

Great--flexible.

Never really used them that much.

Really good before exams (" " extra hours). " " other hours conflicted with classes.

Adequate and very helpful.

" " was helpful during " " office hours.

I didn't use my leader's hours too much because of class conflicts, but I went to others and they were helpful.

Not applicable.

Didn't always fit in with my schedule, but " " made arrangements to help me out.

Seem to be more students needing help than office hours available.

I understand that they have limited time, but I wish there were more office hours.

I have only been able to get to office hours once or twice.

" " always made " " available although I only went to the study session. " " made " " available at other times.

" " is always willing to lend " " whenever I need " ". " " always wants me to come when " " thinks I don't understand something. " " is very understanding.

Office hours were inconvenient for me.

I've never been.

Need more!

Good!

Very generous with allowing students to see " ".

" " was always available during " " office hours.

At " "'s office hours, I found I was able to get more information on my problems from " " because of the one-on-one basis. " " really took the time to explain my problems to me.

I only went to office hours one time because I have to work during them, but " " was willing to meet with me at another time when we both had free time. " " encourages " " students to use the office hours that are available.

Available when I needed to see " " or would make special arrangements.

" " is very good about keeping office hours and even helps a lot when " " doesn't have them.

" " is very open. It is unbelievable how willing " " is to work around his schedule. It is nice when " " expands " " office hours during exam week. " " really seems to enjoy helping students.

Very accommodating!

Due to my schedule, I haven't used the office hours.

SPRING SEMESTER 1989

Please give additional comments that you might have about your study group leader or the program in general.

" " is a very kind, considerate teacher. Very pleasant and relays info very well. Should be given promotion. Should take " " place.

" " is very helpful and offers plenty of exam material to further our knowledge of the topics.

Such a program is certainly helpful to a student like me who face difficulty in coping with a course that I'm especially weak in, like " ". I find that my group leader is very gifted in the aspect of teaching. I'm able to understand quite a few important concepts through " ", which I didn't during class. " " makes it a point to link concepts learned in other chapters and it indeed helped me to understand the whole picture better.

I found this pretty beneficial. My " " is very well qualified.

The program in general is great! I feel that the study group has helped me tremendously in understanding the material and being able to do the work. " " is very understanding and aware of the material. " " knows what is giving us problems. I've recommended " " study group to all by friends who plan to take " ".

" " has been very helpful to me and my fellow students. " " been there when I couldn't get a hold of my T.A.

The groups just need to be more organized to cover more material in the short time. Too much is left to student on what to discuss when all of it needs discussion.

The program should put more emphasis on the lectures and book to help us understand concepts better and be prepared for exams. I didn't learn a whole lot; it just kept me involved in " ".

I found the tutorial very helpful in giving me practice problems that you could ask for help when you did not understand.

This group is extremely helpful. It has helped me to keep up with assignments in these last few weeks. I wish I had joined the group at the beginning of the semester.

This study group was easily a gift from God as without it I would be totally lost in lecture (and the text). " " has done an excellent job. Always well prepared and ready to answer questions. (No question too dumb.) I give " " an excellent evaluation and believe " " should be duly commended for " " work here.

I feel that this study group has helped me tremendously. I know that without the L.C. I wouldn't be doing as well in the course. " " explains the material well and takes the time with us to make sure we understand. " " should be an excellent professor.

I am extremely grateful. Thanks!

This is my second semester of using the Learning Center and it has helped me out tremendously. My grades have really shown improvement because of the extra time spent in the groups reviewing the material.

(This program) This should be more available to everyone who wants help. Too many people don't know this class (group) is here to help, so they struggle through the class not understanding the professor.

Excellent program! It turned around my understanding of the course material. Was lost before I started attending the sessions. Now I feel on top of the material.

Great!! It really helps as a backup.

" " does a good job and has a good sense of humor.

" " has been a lifesaver. Some of my prayers have been answered.

" " is a great asset to the program.

It helps a lot. I don't think I would have done as well in " ". You need to work problems, so sometimes it isn't helpful.

The study group leaders always prepared to answer questions. Has a very indepth knowledge of the subject. In the future, I would like more time spent letting the students do examples alone in class and then go over it as a group.

" " is a very good leader and effective at involving the students to solve problems.

This program has been very helpful due largely to the leader. " " has been thorough and willing to help out and explain everything. I'm glad I attended. It's nice to be able to ask questions and work in a small group. It's easy to feel lost among 50,000 students.

" " is a great help. " " should be commended for " " great performance as a teacher.

Very helpful. Just by going to this study group I did a lot better on my second exam because I understood the basic concepts that we discussed in lecture better.

I think the study group is a great idea. It's a chance for a small group discussion to go over any unclear concepts.

I think it would be a good idea if the study group leader would bring work sheets that we could spend the time working on. It would also be a good idea to stay maybe one lecture ahead of the professor, that way we have a feel for the material before it's covered.

The leader was very good. " " allowed enough time for all our questions. " " always asked us what we wanted to discuss in class. " " explanations were very helpful.

My only comment is "Thank You" to all the people who make this program work because it really does make a difference.

Generally " " is efficient and helpful. On occasion has displayed impatience with our level of understanding--maybe this is just my individual perception. Pace was very fast to cover all aspects. I would suggest handouts with basic concepts specifically stated due to lack of sufficient time for discussion.

I think the program is great and has been very beneficial to me. I have learned a lot and find the information " " gives us very helpful.

I can't recommend this session any higher. It is very, very worthwhile. " " does an excellent job explaining things, answering questions, and working problems. I learned more in the session than from the lectures and discussion sections combined.

Less lecturing and more help with individual examples and problems would be beneficial.

Advertise this program more!

Has been a great help. " " is excellent at explaining otherwise very difficult concepts.

I think that it's an excellent program and should be continued even in the higher courses such as 501. It helps to have additional points of view other than the professor and to have other students' inputs.

The study really helped me a lot because I improved my grade by one letter grade and most important, I understand the problems better.

I with the groups were organized a little better rather than just doing problems and asking questions.

The study group should be placed in a larger room with more space to work. Other than that, the group was fairly beneficial.

It's a good program. " " is a good teacher. " " tries to answer our questions, explain new concepts and asks us often if we understand the material.

" " really knows the material and can explain well. This is the only place I can go to get help. My T.A. cannot even explain things well. If it wasn't for this study group, I probably would be failing out.

Usually the sessions are organized and lead well. At times there is a feeling of condescension from the leader, as if the students aren't as "good" as " " is.

The Learning Center should have a better and larger meeting place.

From what I've learned in such a short time, I am quite happy with the study group and " " performance. " " is a very good TA who explains problems very good.

" " is a super teacher. The only suggestion I have is maybe more summaries of concepts or chapters or formulas through handouts. They really helped to get the overall picture.

I think the group has helped me understand my class a lot better. My leader explains the concepts a lot better than my teacher in class. My leader helps me understand everything because I can feel free to ask questions and " " makes sure I understand the concept before proceeding. I get more attention in these learning groups than in class.

It is very helpful.

The group session has helped tremendously. I noticed improvement right away.

I think it was an excellent program and should be continued.

Without the help of this program, I would not have improved my grades in this class. The concepts and problems of the class have become much clearer since participating in the group.

Do more problems with the students so that we can better understand what will appear on the exam.

The tutorial study group meetings should be held more than two times a week. There should be a little more student participation and discussion. Leaders should emphasize working of previous exams and help to thoroughly prepare students for the two-hour exams.

The program is super, but the group might not be what I need. I think I am interested in more of an individual tutor for next semester. " " tries really hard, but I wish " " could explain the concepts better or use other examples except those in the book only.

It has really helped me grasp an understanding of " " concepts. It is a very open and workable environment and our leader encourages us all to participate. I would recommend this session to everyone in " ". Our leader is highly qualified for this position.

More time could be spend explaining what we were supposed to get out of the lectures. But overall this group has been a great help to me.

" " is an excellent teacher. " " explains things in terms we can understand. Without this program I would have had a very difficult time passing.

For myself, I was unable to get reading done beforehand because of work. Therefore, I didn't get full benefit.

" " is one of the best instructors I've had at the University. " " is organized. " " knows what " " talking about and has good teaching capabilities. " " has helped me immensely.

" " is a great study group leader. " " is extremely organized, very knowledgeable and very helpful. " " is easy to relate to, and I have always felt comfortable in " " class.

" " is a very enthusiastic leader. " " wants to really help. However, " " is obviously busy and cannot always prepare for our help session. This hinders me very much because by the time " " works out/looks up the answer, the class is over. I wish " " was more prepared. Also, " " is often late.

I think the program is extremely helpful and I know that my grade would be much worse if I was not enrolled in the Learning Center.

I think the Learning Center and " " are wonderful assets to this University. I owe my grade in " " to " ". If it wasn't for " " help and attention, I would definitely be in bad condition.

" ", you've done a great job this semester. This study group has helped me a lot. Thanks also for taking the time to make practices exams. They have been a lifesaver!

I have actually learned much more under the study group sessions than I do in class.

I'm very pleased with the study group leader and the program. I really hope this service can be continued so that more students can benefit from it. I really feel that the tutor is exceptionally well-versed in the subject.

I have a much better understanding of " " this semester. " " is very good at leading our group. However, we always put our group and individual input in as well, like a study group.

Both are a great help. They make the class bearable!

" " really cares about how we do in " " and that's what students need here at the U.W.

This program is very helpful for my class.

The program is excellent. I think it should continue. It's significant because it addresses several needs.

" " is very good. I love the study group, it helps a lot. Sometimes I think the other students don't prepare for the study groups and so we have to spend too much time answering dumb questions. It should be mandatory that students come prepared, at least having read the chapter.

The students should be required to come to the sessions prepared. They should read the chapter.

Leader is very good. More sessions or extended sessions needed to keep pace with course.

The program is very beneficial to me. I think we should go through more problems and less concepts. Concepts are explained in class and the book.

I think I benefited more towards the second half of the semester more than the beginning.

Does a decent job of reviewing what goes on in lectures.

Well prepared. Efficiently run session.

Please comment on the leader's office hours.

It is very difficult to get to " " during " " office hours when the exams are near. Perhaps another tutor should help out during the exam week.

" " had office hours, but I never went.

I would really like to see " " have more office hours. Sometimes when I can't make it to the study group I don't even have the opportunity to go to " " office hours because they are so limited.

My hours make it impossible to reach " " then, but even so, " " still lets me know when " " available just in case.

Reinstate Friday hours.

The hours are fine.

They are fine, it's just that my schedule is so busy I can't get to them.

Office hours are O.K. " " is willing to make individual appointments of necessary.

They worked for me--would help if leaders had quite place for us to meet (instead of the hall).

Never been.

Satisfactory.

I have never gone, but I know " " around all the time offering help.

Very helpful and reliable.

I wish they still had Friday office hours.

Convenient for me.

" " is always around which is good.

Office hours - a good variety of times to choose from. I was able to make the times.

My schedule is so busy that I don't have time to go to " " office hours. However, " " is always around.

Office hours were during some class times, but " " tried to be available despite my own conflicts.

Leader's office hours were always available for us to use if we wanted. " " encourages us to use " " office hours.

Have not gone.

Even though I can't make " " office hours, " " always made up some time to help me out.

Adequate.

I wasn't able to attend any of them, but was able to see " " in between class if I had questions.

Twice I did come to " " office hours with a very important question about the homework and neither I nor anyone else could find " ". I was counting on " " at that time and later on was too late.

I haven't used them.

Even though they sometimes don't match with students' free time, " " tries to find a time to explain.

They are fine.

They were at a good time.

I am only able to make it to the study session. I don't have extra time!

Everything fine.

I usually don't need to go to office hours, but they are okay.

" " is available and helpful all the time.

Never used office hours. Study sessions have been sufficient.

Convenient.

Satisfactory.

Not used.

They are good. I like the Wednesday afternoon when we do the decision case. It helps me a lot to understand it. I couldn't do it on my own.

I have attended two of " " extra office hours. They were extremely helpful, especially right before the exam.

Helpful times I came.

" " always has time to see me. I don't even know when " " hours are. " " just always says to come in anytime I want.

I know " " has them, but they are inconvenient for my class and work schedules.

I have never really needed to use " " office hours because most of my concerns are taken care of in the section.

" " was always around when I needed help.

Always willing to make time for the students and answer their questions.

I haven't had to use them yet since my questions are always answered in class.

The leader provides flexible office hours and has made it known that students can always go to " " for help.

" " is usually around in " " specific office hours and " " is willing to help while " " is in the Learning Center office, even if " " is not scheduled for office hours at that time.

" " always around when I need " ".

" " is available any time.

The leader is always available and willing to help any time. " " excellent.

I can't make any, but I go see my T.A. instead.

Perfect hours.

Flexible.

" " is available whenever we need help and is flexible to our schedule.

Tries to work them into the majority of students' schedule along with " ".

Good number of office hours. Seems to be available a lot for the good of the students.

APPENDIX D

Table D

Comparison of Specific Course Grades (Means) and Center Attendance

Table D-1

	BUSINESS 200 - ACCOUNTING FALL	SPRING
GRP 1 (1-40%)	1.63	0.800
GRP 2 (41-79%)	1.81	2.333
GRP 3 (80% or +)	2.69	2.500

Table D-2

	BUSINESS 201 - ACCOUNTING FALL	SPRING
GRP 1 (1-40%)	2.00	2.000
GRP 2 (41-79%)	----	2.735
GRP 3 (80% or +)	3.17	2.300

Table D-3

	BUSINESS 570 - ACCOUNTING FALL	SPRING
GRP 1 (1-40%)	-----	-----
GRP 2 (41-79%)	-----	-----
GRP 3 (80% or +)	3.42	3.205

Table D-4

ECONOMICS 104		
	FALL	SPRING
GRP 1 (1-40%)	1.63	2.300
GRP 2 (41-79%)	2.38	2.375
GRP 3 (80% or +)	3.50	2.667

Table D-5

ALL COURSES		
	FALL	SPRING
COMP GRP	2.350	2.350
GRP 1 (1-40%)	1.88	1.750
GRP 2 (41-79%)	2.00	2.511
GRP 3 (80% or +)	3.05	2.850

Table E
Correlations of Student Grades by Course with
Attendance and Regression Summary

	Correlation	Regression Summary B_0	B_1	F	Sig.	R^2
Economics 103						
Minority	.512	1.16	.07	7.48	.012	26.3%
Majority	.906	1.77	.10	32.19	.000	82.1%
Economics 104						
Minority	.556	1.06	.08	5.37	.039	30.9%
Majority	.251	2.59	.03	.74	NS	6.3%
Accounting 200						
Minority	.399	1.45	.05	1.70	NS	15.9%
Majority	.509	-	-	-	NS	-
Bus. Statistics						
Minority	.102	2.47	.01	.06	NS	1.0%
Majority	.457	1.51	.05	3.44	.087	20.9%